Wells: Effigy in South Aisle of Choir.

THE STATUES OF WELLS, WITH SOME CONTEMPORARY FOREIGN EXAMPLES.

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IT is not necessary for me to say much of the very high value which is the possession of English art in the statues of Wells front. It is an acknowledged value of many kinds, and our good fortune in it can hardly be exaggerated. These statues have escaped the chances which have been almost everywhere destructive to mediæval sculpture—they have not been largely defaced by iconoclastic or political riot; they still possess their heads, arms, and their main features unbroken; the face of the stone has not completely perished as so much of English building stone has done, and in the pure air of a West-country town it has been but little coated with dirt; and then, as a crowning mercy, the restorer has not restored our statues away with that merciless practical joke of his which, while it fills the niches, blackens the memory of mediæval art.

What we have got at Wells may be gauged by thinking from what we have been preserved, such as a visit to some other cathedrals will press home upon us. Wells shares with Exeter the rare distinction of not having had its façade disfigured by wholesale introductions of the sham mediæval figure. What if Bishop Jocelyn's front were as Salisbury front is now: statued as Lichfield and Canterbury have been: or "restored" as York is being restored! It is with outraged senses and indignant protest against the incompetent guardianship of Deans and Chapters, against the cruelty of restoration committees, that we approach the fronts of most of our cathedrals. But at Wells we can go calmly and thankfully to the consideration of the art of our forefathers.

And fortunate, too, are these Wells statues that they stand in their original setting, though here we have to deplore the bad taste of the restoring mania in not a few unwise substitutions. But at any rate the statues of Wells stand in the places where their sculptors set them; we see them not as exhibition specimens in the arid atmosphere of museum display, but still part of the living body of architecture—the blossom upon the tree of art—in the beauty of its growth. Still, as the setting sun lights up this grey front, we can recover the memory of its first splendour, can with easy imagination see it glorious and gracious, a mighty jewelled iconostasis, arrayed with golden bright-robed figures—the innumerable company of the saints.

And that these fortunately preserved statues are of the date and style which they are is specially fortunate, for this date and style make them not only interesting and beautiful,

but of all our statues the most historically valuable. For they belong to that fresh, early period of Gothic art when its expression seems to leap upward like a flame; when, in the heat of it, art ran molten into the moulds of new motives; when the image and superscription that for the thousand years of the Byzantine dynasty had been the currency of art were in a couple of generations entirely coined afresh—minted, as it were, for the Gothic dynasty. We can see in the Wells statues the genesis of a dominant art, the triumphant progress that marks the creation of a great style, till in the latest and best of our Wells figures has been reached the highest level of the English accomplishment. Indeed, when we consider the quality and the number of the statues, and their fair preservation, compared with the scantiness, the disfigurements, and the restorations of nearly all our English mediæval figure-work, we might say that with the loss of Wells would go one half of our noblest art. Only conjecture and tradition would remain for its greatest credit as to sculpture. It would be as if the *Iliad* and the *Odyssey* were gone, and only the *Homeric Hymns* could be produced as proofs of Greek epic genius.

Clearly the subject of my lecture has many sides, and I have neither the time nor the capacity to discuss them. My efforts must be confined to developing certain views upon only one aspect of the Wells statues, which circumstances have brought to my notice. The reason of my addressing you is really the occasion that has lately been afforded to the student of the Wells statues by the erection of a scaffolding during the past year upon the west front. Thirty-three years have passed since from the scaffoldings set up for the restoration of the front archæologists last had the means of making close acquaintance with the statues. At that time a valuable series of photographs was taken by the Architectural Publication Association and Mr. Phillips, of Wells, and these have been the best sources of information on many points. Last year one of the figures at the north-west angle [fig. 11] fell to the ground (pushed out by the accumulation of dirt behind it), and it was wisely determined to make a general overhaul of the statues, and by cramps and hold-fasts safeguard them against such accidents. From the scaffoldings erected for this purpose Mr. St. John Hope has been able to examine all the statues at close quarters, and has made now a complete schedule of them, with note of the character and attribute of each, and every detail of attitude and symbol attaching to them. At the same time a complete new series of photographs has been executed for the Society of Antiquaries. Professor Lethaby has joined with Mr. St. John Hope in a consideration of the evidences that are so to hand as to the scheme of the statues. For the first time their identifications will be scientifically discussed at competent hands, and we may confidently hope that the main questions of iconography will now be authoritatively settled, and the import of these arrays of statues brought out of the fog of well-intentioned conjecture which has enveloped them. We shall have some certain ascriptions instead of the imaginary titles with which Cockerell and others have labelled them.

My part to-night is, however, to turn from the valuable and attractive enterprise of naming the statues to a less exciting but still I think interesting side of their sculpture. The scaffolding has given opportunity of observing at close quarters not only the matter of the portrayal but *its manner*, and has enabled my friend Mr. Arthur Gardner to make photographic studies which the lantern will put before you to-night. As preliminary to this, I should wish to make a short survey of the points we wish to develop.

The art of the statuary in stone is the art of his chisel. His craft lies in the cutting edge of the implement with which he shapes and models his stone. Now our point is, that the consideration of that use of the chisel gives the key to the history of English sculpture. In the simple action of cutting stone lies a world of diversity, in which can be mapped out territories of style, as clearly as in the world of nature are mapped out the regions of

distribution for animal life. The variations in the technique of a craft grow and spread under the same class of laws—those of heredity and variation, which have created in different districts the characteristic fauna and flora of each. For these variations have never been matters of arbitrary invention or designing, but exhibit themselves under the conditions of a coherent growth, having definite forebears behind them, and an acknowledged progeny in front. So that even in such a straightforward matter as the plain dressing and walling of freestone, the date and style of the masons were expressing themselves all through the Middle Ages, and this expression can be traced from one period to another by the variations in what are the simplest actions of building, the finishing and setting of the stone employed.

FIG. 1.—THE MADONNA OF CENTRAL DOORWAY.

Certain and fully expressive of date and style is the signature of the figure sculptor in his use of the chisel point upon his statue—no doubt an individual signature, but not so much one of individual fancy and caprice as the expression of his time, showing a growth from one stage of execution to another, and with distinct peculiarities arising from the phases of his craft, from the traditions of his age, from the texture of the stone he uses, from the commerce and connections of the habitat in which he works. The sculptural representation of the human figure can be seen, indeed, to be a field in which conventions *must* develop themselves, and in the utterance and accent of these conventions lie a thousand styles. All the features—eyes, mouth, ears, hair, hands, feet—can be expressed in sculpture under endless diversities, with this or that indicated and this or that suppressed, with now one kind of vraisemblance and with now another: and so on with drapery and its ornament, its rest, its movement, its folding and its texture; all these have countless properties, none of which can be completely represented in sculpture, but which can be suggested now this way and now that. And that the necessary conventions for this suggestion are put this

FIG. 2.—CORONATION OF THE VIRGIN.

way and not that, or in another way, is a writing which declares the time, the training, the nationality of the sculptor. His chisel conventions are his native tongue. From the consideration of them we may say he is Englishman, Frenchman, Italian, or German, that his craft has grown up in working upon this or that stone, that he was living at a certain date, and had in fact a certain position in the history of English, French, Italian, or German building-art.

FIG. 3.—"BISHOP."

FIG. 4.—"KING."

To endeavour to bring this before you with regard to the sculptors of the statues at Wells is my object to-night, for Wells Cathedral allows us to trace the story. The building of Wells Cathedral was the work of sets of masons who began in the twelfth century, and carried on, with certain breaks no doubt, but still with what was practically a continuous succession of stone-cutting craft, culminating in the statues of the west front, and leading on in them from step to step of progress until the highest attainment was reached. The material was the oolite stone called Doulting, which is quarried near Shepton Mallet, about five miles away. This stone was used throughout for the whole fabric—for wall-stone and piers, for the shafts and mouldings, as well as for all carvings and statue work. The exception is in the latest building (1220–1240) in the shafts of the west front, which in the fashion of Purbeck shafts are not from the Purbeck quarries, but are worked in the lias limestone of Langport. Now this combination of a coarse oolite in wall and arch with slender limestone shafts makes a distinct and peculiar sub-species of thirteenth-century masoncraft, which it is interesting to distinguish from the masoncraft in the finer Caen stone and Purbeck marble. This latter was what appeared at Canterbury first on a big scale in the work of William the Englishman, and then at Chichester, Rochester, Ely, Worcester, &c., and especially at Salisbury, contemporary with Wells but of a different craft. The Somerset sub-species, if we may call it so, since its oolite and limestone are the product of Somerset, is distinguished by certain peculiarities of moulding in arch moulds and capitals, and by not having its wall-stone dressed with the notched chisel. It occurs at Sherborne, Gloucester, and Exeter, but its great accomplishment was the

west front of Wells, and it was in connection with this craft that the great statue making of the front was achieved.

We can indeed trace back the thirteenth-century figurework to early beginnings in the West. Elsewhere in trying to give distinctness to the classes of First Gothic style in England, I have particularly ticketed the twelfth-century Gothic of the west of England as having peculiar advanced features founded on the local Romanesque, and taking the Gothic idea very far forward in comparison with the contemporary eastern Transition, and as, in my opinion, very distinctly laying the foundations of English Gothic. The sculpture of

FIG. 5.—"PRINCE" AND "NOTABLE."

FIG. 6.—"ORATORS."

this early Gothic school was a very remarkable part of it—its leaf-carving can distinguish it from contemporary schools, and its use of figure-work is equally distinctive. There are to be found in this district, and, apparently, dating to the middle of the twelfth century, a whole body of figure representations in the tympanum and in figure reliefs, of an advanced Romanesque type. The Wenlock lavatory and the Southrop font may be specially mentioned, and in the Malmesbury and Glastonbury doorways this figure-work of the late twelfth century, though remaining to us on a small scale, shows a decided Gothic freedom. The same school of carving may then be taken up at Wells in the figure-worked capitals and the head and dragon carvings of the North porch, and in the capitals, which have figure-motives of increasing skill and liveliness, in the transept and nave, and mixed with which are head-carvings of label, stops, and corbels, wherein the power of representation advances from archaism to a free and tender treatment of human expression.

Now side by side with this progress of the smaller architectural figure-works of the mason

can be seen at Wells another advance towards free sculpture. About 1200 the memorials to prominent ecclesiastics were taking the form of carved representations of their figures. In the south and east of England these recumbent effigies of bishops and abbots were supplied from the Isle of Purbeck in Dorset. But Wells Cathedral has no Purbeck effigies of the twelfth and thirteenth centuries. Instead are seven "bishops" carved in the Doulting stone. Five of these can be dated to about the last years of the twelfth century, since the foliage carved round the effigy is of that peculiar type which at Wells, Llandaff, &c., makes the distinction of the western Transitional style. There is great variety of treatment in these five effigies, but they are all of the same manner, and may very likely have been carved all of a batch, on the principle of commemorating in Bishop Reginald's newly finished quire that building bishop himself and the four preceding prelates who since the Conquest had held the See of Wells. But specially the treatment of the attitudes and draperies is to be noted. Little by little these figures can be seen to obtain relief from the ground, and assume a statue-like form. Moreover, we can see that the sculptors who had started from the traditional goldsmith's technique—from the flat modelling and reeded lines, which in seal modelling, in lead font castings, and in the stone relief carvings of the tympanum, showed the style of Byzantine shrine-work and goldsmith's imagery—that the stone-sculptors in the use of the chisel upon a block of stone have acquired, with new ambitions, a new technique. In the draperies we can see the change is immediate—instead of the blunt edgings and shallow incisions, which in the goldsmith's hands are the indications of folds in dress, the habit of the mason's chisel makes deeply cut mouldings, in fact, the hollows and ovolos of Gothic arches. Now the setting of the fillet or angular edge upon the bowtell was not at first a characteristic of the West-country Transitional or Early Gothic style—but it comes in with the general diffusion of the characteristic Early English manner that came about the year 1200. It is interesting to observe, therefore, how closely the draperies of the figure-worker follow in the sequences of the arch-mould carver. We

FIG. 7.—"SEATED KING."

FIG. 8.—"LONG LADY" ON SECOND TIER.

can in the course of the Wells figure-subjects trace the parallel rounded ridges or bowtells (which at first represented the folds of the dress) acquiring angular projections, just at the date that the arch mouldings do, and soon in the working of flat fillets with hollowed intervals the Wells drapery reaches its characteristic representation. The recumbent effigies show the same steps—the two later in the north aisle of the quire have this drapery in its full style, and cannot be distinguished from the bishop statues of the front—they have only to be set upright to take their place with them [see *headpiece*].

Thus the art of the *free statue* in stone grew up without any special effort in the Wells building—every stage of its development can be noted in the architectural masoncraft. The head expression had been long in practice for label and corbel; the full relief and the attitude of a statue had by 1220 been for some time in the ambitions of the carver of recumbent effigies, by 1220 the draperies had made their expression in the architectural and effigy carving of the mason. Nor was the motive of this great enterprise of statue-making—that of setting up ranges of life-size saints—any sudden or new idea of the English art at the time. It is too often forgotten that life-size free-standing images had all along—from the tenth century, at any rate—been in the habit of English art. There is really no necessity to quote from the many early records which mention metal and wood images for roods and altar beams. The manner of such representation was part of the ordinary church fitting of the time, and every church had its niches and arrays of saintly figures. Though we have of course lost our English examples, they remain in many foreign churches, and that English churches were as full of native-made statues cannot be doubted. But this statue-making was goldsmith's work—adapted for the niches of an internal screen or reredos: the only new thing in the array of the Wells figures was that they were stonemason's work, and formed part of the architectural scheme of the open-air front. When the skill of the mason had reached that power of carving the human figure which, as we have seen, the building of Wells gave him, immediately the project of using his powers to furnish the great iconostasis of stone which the west front of Wells is, would arise and would be in the natural functional development of English Gothic style.

FIG. 9.—BISHOP AND LADY ON SECOND TIER.

After this introduction let us now turn to the statues themselves. It is the continuous progress of the Wells statue-making which I propose to bring before you—showing, to my mind, that it was the work of a body of Wells masons engaged upon the building of the front, and not that of a foreign set of sculptors introduced for the purpose of the job of figure-work. I have, therefore, put the statues into certain groups, which by their technique separate themselves into successive stages of development, and will ask you to follow me through these successions, and observe how continuous they are, and how there is consistent progress from first to last. The illustrations will put before you twelve classes, which may be dated in

succession. Figures 3–14 will show this, and impress on you the evidence of a peculiar Wells technique which was a distinctly native possession, growing out of the Wells building and declaring itself as the production of no foreign hand. Then, in order to emphasise this, I refer you to a figure remaining at Winchester in which the Wells manner can be seen

FIG. 10.—"DOCTOR," "PANEL" FIGURE ON WEST FRONT.

FIG. 11.—"PANEL" FIGURE AT NORTH-WEST ANGLE.

FIG. 12.—"PANEL" FIGURE ON NORTH TOWER.

carried a stage further, and then, for comparison with this, statues which are, I think, contemporary or nearly contemporary, first from Westminster and then from Lanercost and Lincoln. The Wells treatment will, I believe, display itself as distinct beside the other English works. And yet in them all—at Wells, Westminster, and Lincoln—there will be seen a general flavour, a generic likeness, which seems to me to be evident under the distinctions of species in the three [see figs. 15, 16, and 17].

But to emphasise this I have to turn to contemporary work abroad, and my friend Mr. Gardner, who has photographed many of the foreign statues, has kindly consented to give you such a survey of this field as our limited time will allow. Despite similarities and often identities of the subject of statue-making—despite the likenesses of treatment as to the characters represented—despite the free trade in motives which were common to all ecclesiastical art—despite the close parallelism in the conditions of the sculptors, abroad as in England working up from Romanesque traditions in stone-cutting to the accomplishment of Gothic ideals—despite

FIG. 13.—"IMAGE" FIGURE.

FIG. 14.—"DEACONS" ON NORTH TOWER.

all these I will ask you to observe that the handling of the English work shows as distinct from that abroad; that there is a generic French manner displayed at Chartres, Amiens, and Rheims, which, just as our English generic manner had its own varieties, developed in the sculptural evolution of each of these three cathedrals a particular specific technique that can in each case distinguish them.

If I can accomplish this the conclusion to which I lead hardly requires statement—it is

that the Wells statues were a production of English art, that they were not, as much assertion has declared them, the work of any foreign sculptor—for such assertion not only rests on no foundation, but distinctly ignores the evidence that is available—the evidence of the works themselves when put beside those of other places. For as it can be clearly seen that neither

FIG. 15.—WESTMINSTER CHAPTER-HOUSE.

FIG. 16.—LINCOLN: SOUTH DOOR OF ANGEL CHOIR.

the sculptors of Westminster nor those of Lincoln carved figures like those of Wells, so equally must those of Chartres, Rheims, and Amiens be acquitted of having had a share in them.

Before Mr. Gardner discusses the foreign statues, there is a point to bring to your notice in the evolution of drapery as this was accomplished in the hands of the Wells stone-carvers.

The costume of the twelfth and thirteenth centuries consisted of a series of tunics worn one over the other, fastened at the neck and usually girdled, such tunics as modern life has preserved in our linen bed-gowns, in the clerical surplice, in the academical gown, and the labourer's smock frock. Both sexes and all ranks and conditions, lay and cleric, were attired in these tunics, but other garments were worn with them as a matter of state, or proof of condition, such as the long cloaks of kings and ladies, that were hung from the shoulder and fastened by a cord in the front; and the priestly chasuble, which was in effect a circular or extinguisher cape through which the head was thrust. These are the draperies which thirteenth-century figure-sculpture mostly represents.

FIG. 17.—LANERCOST: ON WEST GABLE.

Now it was a remarkable peculiarity of the Romanesque or twelfth-century figure-representations of North-West Europe that they exhibited the garments as of very thin, almost muslin, texture, and as forcedly, almost violently, showing the anatomy of the figure. This forced anatomy was, I believe, a pure matter of artistic convention—the goldsmith's convention—in descent from Carlovingian art, the last remainder of Byzantine tradition and Classic nudity. Our English share in this tradition can be seen in the remarkable figures that are in the south porch of Malmesbury in Wiltshire. They may be accepted, I think, as being of the second or third quarter of the twelfth century. The method of their sculptors is to show the folds of drapery by round-edged incisions in conventional parallel lines or distinct radiations.

Now beside these I place the earliest carvings of the Wells front, those on the constructional spandrels above the west door. It can be seen that the angels on each side of the Virgin and Child exhibit the tradition of Carlovingian representation, but with some delicacy [see fig. 1].

But in the figure of the Madonna herself there is more—there is an improved representation of drapery. Now this relief is a detached piece of stone set in the quatrefoil; yet as to date it can be seen that the foliage of the dwarf capitals which are part of the stone is just that of the Wells capitals of the beginning of the thirteenth century; so we conclude that the carving of this piece was in the hands of the stonemasons, just as the angels had been. However, in their hands the drapery of the figure is acquiring a distinct manner—narrow raised ridges take the place of the furrowed slits of the earlier representations. Parallel grooves and outlining ribbings were the goldsmiths' representations of drapery; the chisel of the stonemason has, in practice, struck out a way of its own.

I am inclined to give a further illustration of this development, so I turn to contemporary work at Worcester. In the spandrels of the wall arcades of the choir at Worcester there can be seen just this similar evolution of drapery—from Romanesque grooving to Gothic sculpture.

The likeness of the Worcester work to the Wells Madonna is distinct, as it is to the Bible subject pieces at Wells that we may date shortly after the Madonna. These are in the quatrefoils at the top of the ground story, and were no doubt put in hand along with the quatrefoils in which they are set. They were therefore carved about 1225, within a year or two of the time of the commencement of the front. It can be seen how like is the treatment at Worcester and Wells, and how quickly the attainment in both has been reached. These Bible reliefs are of great beauty, but when seen from below, only the decayed parts are mostly visible. Close at hand one can find in the sheltered parts a charming delicacy of execution.

Finally, showing further attainment is the larger relief of the Coronation of the Virgin, in which Byzantine reminiscence has entirely disappeared, and drapery is shown with the natural and functional lines. We may take it that as the dress of the thirteenth century is here represented, so was it worn, and that the men and women of the day appeared, when seated, as the sculptor has here carved Our Lord and the Virgin [see fig. 2].

Yet in spite of this naturalness, there must be in sculpture conventions or manners of representation, and here these manners indicate this piece as Wells sculpture, and not the sculpture of any other place. I may point out one peculiarity which, I think, marks this as English work. That is the representation of the tunic of the Virgin to the feet. The contemporary Continental presentations, as far as I have been able to trace examples of this scene, always show the cloak of the Virgin carried right over the knees. Mr. Gardner will presently show some foreign examples, and what I think will be also evident is this, that in this relief the conventions of the Wells stonemason are his own. We note his rendering of the smooth part of drapery by a succession of fillet edges, and of the deeper folds by, as it were, arch-mould sections, though on the small scale of these figures the latter is less evident than it will be on the large statues [see figs. 4 and 5].

So much for the drapery. There is, however, one more point to be noticed, that these reliefs of Wells are detached pieces of stone. They are not reliefs cut in the constructional wall-stone. Their figures are statues in embryo. However, I turn to another source for the pose of the standing figure—the statue itself. This can be traced from the recumbent or memorial effigy, and I have already referred to the Wells effigies.

Note.—Figs. 10 and 11 are from the photographs by Mr. Phillips, of Wells. The remaining figures are from Mr. Gardner's photographs.

Mr. Arthur Gardner, in showing a series of lantern views of foreign statues contemporary with those discussed by Mr. Prior, made the following observations:—

Mr. Prior has asked me to say a few words about some foreign sculptures contemporary with those of Wells, in the hope that even a brief glance at some of these will emphasise the point that he has endeavoured to bring home to you, that the Wells style is a purely English and, what is more, a local style. I am afraid I am hardly competent to lecture to the present audience on so vast a subject as French sculpture, but last summer I was fortunate enough to be able to spend a day or two with my camera at Chartres, which is, perhaps, the greatest museum of twelfth and thirteenth century figure-sculpture in France; and I hope that, even if you can detect faults in my arguments, the photographs of the works themselves will prove the point that I wish to emphasise.

In dealing with the Chartres work we will first look at the earliest statues in the west porch, not for any light that they may throw upon the Wells statues, but because I think they will be useful for comparison with the later figures at Chartres, and because I think we shall find certain features in

these repeated in the later statues which denote a local style of carving in nearly all the work at Chartres. The drapery is rendered by a series of parallel ridges and grooves. These are arranged very close to one another to represent very fine drapery, and no pains have been spared to make the work as rich as possible. These draperies cannot have been studied from natural draperies, but represent a long-established convention, and appear to me to be stone renderings of the forms long familiar to the sculptors in ivories and manuscripts.

The rest of the sculptures of this great porch display rather more freedom, though the same characteristics are to be found in all of them. In all the large statues we have the same curiously long proportions, the same fine draperies—*drawn* on the stone rather than *modelled*—the same zigzag folds and careful treatment of details. Some of the smaller figures in the mouldings above the capitals display more freedom and less convention than the stately kings and queens below, but otherwise the style is the same.

The Christ from the central tympanum is one of the most sublime conceptions in mediæval art, and there is a haunting beauty in all this strange early work which leaves an impression on the mind more lasting even than that left by the far more developed later statues. The date of this porch is 1140 or 1150. The latter date—about 1150 or a year or two later—is that favoured by M. de Lasteyrie, the latest authority.

For work of the end of the twelfth century, between that of the west porch at Chartres and the thirteenth-century sculpture there, I have not been able to find a photograph to show to-night without going rather far afield. However, the great porch at Santiago de Compostella, in Spain, is of the right date—1180–1190—and can be studied from the cast at South Kensington. Though we must allow for local peculiarities, this work is a good example of the period. We have lost the mystic charm of the Chartres figures, but we have perhaps a more vigorous art. Proportions are more natural, and there is much more attempt to render movement and expression. We still have the drapery represented by ridges and grooves, and the zigzag folds are very conspicuous.

We must now pass on to the north and south porches of Chartres, which we may take as more or less contemporary with the work at Wells. I have not been able to find the exact date of the work, but Viollet-le-Duc dates the north porch 1230–1240. According to some authorities the work was begun in 1215 or 1220, but it was not entirely finished till 1275. Most of the work must, however, have been carried out before this, and we have a record that in 1259 St. Louis "caused the north porch to be completed," and that the church was dedicated in his presence in the following year. The work done after this must probably have consisted in a few finishing touches to the south porch and possibly in the gallery of kings arranged above it.

Judging from the statues themselves the earliest appear to be those in the western bay of the north porch. Much has happened in the seventy or eighty years that have elapsed since the carving of the west porch, and great progress in the art of sculpture is to be seen. Proportions are far more correct, and far more skill and variety are to be seen in the draperies; but we still have the same fine stuffs rendered by a multitude of almost parallel folds.

Passing on to the statues in the central bay, we see a slight advance, but the main characteristics are the same. We have the same multitude of small folds, with none of them boldly or deeply cut. The minutest details are carefully rendered, as can be seen in the marking on the stone of the rich embroideries of the robes of the St. Peter. In the edges of the garments we find reminiscences of the zigzag folds, though half disguised by an attempt at a pleasing variety. The long oval face and high cheek-bones are characteristic of the Chartres work, and can be seen in the statues of the south porch as well, and even in many of the early figures of the west porch.

The statues known as those of "founders" and "benefactors" on the outside piers of the north porch seem to be the latest of those in this porch, and may date from about the middle of the thirteenth century. The folds are rather more widely spaced and varied, but are evidently the production of the same school as the other statues. The long faces, with long nose, high cheek-bones, and small pointed chin, are of a French type, and differ much from the broad type of the Wells faces.

The heads of the Deacon figures at Wells are good examples of English work. They are of a broad square type, with a large and heavy chin, giving a determined look, which contrasts strongly with the long oval face of the French type. The German thirteenth-century head is usually small, as

in the important statues at Naumburg, represented by casts at South Kensington. The features are generally small and screwed up into a broad smile. The work often is bold and strong, but lacks the calm beauty of the French ideal.

It is time now to turn back to the south porch of Chartres. The statues here are, as a whole, less interesting than those of the north porch, but there are some good ones among them. Both porches were being built at the same time, but the average date of the sculptures of the South may be somewhat later. Some of the figures are rather stiff and mannered, but most of them present the same features as the rest of the Chartres work. The fine draperies and careful rendering of embroideries and details are conspicuous. The well-known figure of St. George, however, is of a rather different type, and may be as late as 1250 or 1260. The bolder treatment of the drapery and the broader and more varied folds display the handiwork of a well-trained sculptor, and bring this statue into closer connection with other French sculpture of the period.

The gallery of kings above the south porch I have taken as the last work among the Chartres thirteenth-century sculptures. These may have been put up after 1260. They are placed high up, and are not very striking. The faces are of a regular French type, and the draperies are rather monotonous. We see somewhat similar work to this at Rouen and elsewhere.

Among the most important sculptures of the early years of the thirteenth century must have been those of the west front of Notre-Dame at Paris. Most of the larger statues, however, have suffered so much from mutilation and restoration that I do not feel on safe ground in taking them as evidence. I will, therefore, content myself with quoting a sentence from Viollet-le-Duc, who says, "It is easy to recognise at first sight a statue belonging to the school of the Ile de France in the thirteenth century among a thousand others," and pass on to the famous sculptures of the west front of Amiens Cathedral.

Most of this work appears to be of about the year 1230, and differs almost as much from the Chartres style as from that of Wells. The statues are large and simple in style, and few of them show the elaboration of detail which we find at Chartres. Draperies are not often very deeply cut, though they are effective and always up to a fairly high standard in quality; thus showing the existence here of a well-practised school of sculpture. Most figures are standing squarely on both feet, with the knee hardly bent.

A rather bolder style is to be seen in the famous statue of Christ which occupies the central position of the front. The draperies are more deeply cut and the whole shows an advance in style. Either it must be a few years later in date, or this important statue must have been entrusted to an artist who was somewhat ahead of those who were at work on the rest of the front.

For work of the middle of the century we must turn to Rheims. It is impossible to describe this vast array of sculpture in the few minutes at our disposal to-night, but I will try to pick out one or two characteristic features. Some of the statues of the north porch are rather coarse, and may be earlier, but many of those of the western porches are of supreme excellence. The sculpture here, as one would expect from its geographical position, lies half-way between that of the Ile de France and German schools. The draperies are bolder and more deeply cut than in the older work and the heads usually rather small. Faces are often smiling, but never lose the French prettiness. The eyes are long and narrow and placed horizontally, or even with the outer corners raised—a feature noticeable in the angels, and which may be due to German influence.

Some of the statues belong to a different class and are of a distinctly classic type; as, for example, the group of the Salutation. The folds of the drapery are small and much broken up, and the faces broad and noble, reminding us of the best Roman or Hellenistic portraits.

If we take a group of statues representing the same subject, such as the Salutation, from each of these great cathedrals and compare them carefully one with another, we can hardly fail to be struck by the fact that each group represents a local style with its own peculiarities and conventions. Above all, the Wells figures form a class by themselves; and after looking at a series of photographs of mediæval sculpture, both in this country and abroad, I think you will admit that Mr. Prior is justified in claiming the Wells sculptures as distinctly English work, with marked characteristics which distinguish them from the great French sculpture of the period.

DISCUSSION OF MR. PRIOR'S PAPER.

The President, Mr. Aston Webb, R.A., F.S.A., in the Chair.

Mr. W. H. ST. JOHN HOPE, M.A., said he was so thoroughly in accord with all Mr. Prior had said that he had very little to say on his own account. As regards the English origin of these figures he was entirely in agreement with Mr. Prior. Only a few weeks ago he had the opportunity of showing to M. le Comte de Lasteyrie the photographs of these wonderful figures from Wells. He asked M. de Lasteyrie whether they had anything of the kind in France that would justify those who claimed a foreign origin for some of them, and he said at once, "No, there was no French influence in them—they were perfectly English," and with the verdict of so high an authority he thought they might rest content. It was rather exasperating, in taking up guide books and other so-called authorities, to find that all the fine work in this country was set down to foreigners. Yet when they made a comparative examination of one work with another, or when they went to those absolutely undeniable authorities, the documents, it would be found that so-called foreign works, or even works that looked as if they ought to be foreign, were almost always the work of men who bore English names, and whom there was no reason to suppose were other than Englishmen. Dining not long ago in the hall at Magdalen College, Oxford, he was seated in front of that beautiful panelling behind the high table. He asked one of the Fellows, who had made the study of the College a speciality, whether he had found any reference in the College accounts to the men who produced this very charming Renaissance work, and he replied that he had, and shortly afterwards he (Mr. Hope) received from him the references to the accounts. The timber had been sent from London to Oxford, it had been carved in Oxford by Englishmen, and the account showed that this wonderful Renaissance work was the work of English artists, and not of Italians, or even of Flemings who were tainted with Italian traditions. Mr. Prior and Mr. Gardner had shown how very clearly these Wells examples stood out from anything else as being the product of our own country and not of any other. He had been over these figures several times with Mr. Prior upon the scaffold, and with Mr. Lethaby too, and their views were so thoroughly in accord that he could add nothing to what Mr. Prior had said, and he should like to hear what other people had to say who had heard Mr. Prior's views.

Professor W. R. LETHABY expressed his entire general agreement with Mr. Prior; he did not differ from him even in the minutest detail. With regard to the founders' statues at Chartres mentioned by Mr. Gardner, the most recent opinion was that all these statues represented saints and scriptural people. It had been shown, with regard to these so-called founders at Chartres, that the very ones that were called Countess Matilda, King Richard, and so on, had below them figures of David and Samuel and biblical people, and the most recent view was that they could all be assigned to biblical people and to saints in the calendar. Anybody in search of a holiday should go to Rheims this coming summer. A vast scaffolding was creeping round its west front, which stood out beyond anything else in Europe that it was possible to see—except, perhaps, from an entirely different point of view, St. Mark's in Venice. One-third of the front on the west side was already covered by a tremendous field of scaffolding, and that would be removed, and when it was removed nobody would know what they would see then!

Professor BERESFORD PITE [*F.*] said he had derived special pleasure from renewing an acquaintance made many years ago with the sculptures at Wells, and as it had not already been done, he should like to propose a vote of thanks to Mr. Prior, and also to Mr. Gardner, for the exceedingly interesting, valuable, and important and pleasurable Paper and illustrations they had had that evening. To architects there was a very great and delightful element of beauty in the Wells front. The extraordinary contrast of the forms of the sculpture, and yet their harmony with the columns and the shaftings, was of very great value as an element of design, and it was altogether charming to be told by Mr. Prior that the forms of the mouldings linked themselves with the sections of the drapery. There was something fascinating in that idea that he did not think they would readily forget. The design of these sculptured fronts was very interesting. One had been rather compelled to the thought that they were designed to provide niches for a story, that the architectural design was subordinated to the theory, or the poem, or the ecclesiological intent of the front. He had always felt that very strongly at Wells, but he did not know that he was going away contented with Mr. Prior's interesting disquisitions on chisel markings, and Professor Lethaby's entire agreement in these minute details, if they had no indication of the story that had led to the creation of these delightful series. The biblical

series down below, the Resurrection series up above, were didactic in a high degree, and one could not but believe—or rather one would expect—that the figures in between had some story, meaning, order, and ratio, which would define to a great extent the limits of the original design. Unfortunately, Salisbury was not what it had been. In Peterborough, in Crowland, and in Lincoln, they saw other façades laid out for sculptural representation, and he could not accept the feeling that a mere architectural arrangement of niches was designed by one man, and then a group of sculptors was called in to fill them accidentally, in some cases with portraits, in others with scriptural figures. He had an idea that a great plan, such as that which underlay the subject-matter of a stained-glass window, underlay the subject-matter of this front. He hoped before they separated they would have a little daylight thrown on this very interesting and important subject. Of course there was still at Wells a feeling of great originality on the part of the designer. The man who designed that front cut himself free from a great many traditions, and thought for himself. As regards the form of the gable, he had no knowledge of any other of the kind in England. He did not know if it was altogether unique, but his knowledge on the subject was a little limited. It was certainly very remarkable and very peculiar, and exceptional in stone. He supposed it was always the intention to erect western towers, and that some idea or some design must have been in existence when the lower part of the front was planned, to harmonise and carry out the same treatment, or a treatment harmonising with the gable in those western towers. Much about the same period they had Peterborough, with its great originality of treatment, as well as the other façade fronts at Salisbury and Lincoln. Was not Hugh de Wells translated to Lincoln? Did he not do work at Lincoln very soon after the work at Wells? So there was some great movement in the direction of originality of treatment at work among their English church architects at that time that was a matter of great interest, and of which Wells was one of the finest examples.

MR. HUGH STANNUS, A.R.C.A. [*F.*], in seconding the vote of thanks, said that with regard to the suggestion of asking Mr. St. John Hope to explain the storiation: Mr. Prior had explained that the scheme of storiation was being carefully worked-out by two friends of his, and he trusted they might have an opportunity of reading about it later on. Two thoughts had struck him very strongly while looking at the delightful series of slides shown by Mr. Prior and Mr. Gardner. The one point was—how very like the development of Greek art they were: he could exactly parallel every stage of that development from photographs that he had, beginning with the archaic statues dug up in the recent excavations on the Acropolis, right down to the group of the Three Graces, or whatever the subject might be, in the British Museum. There was firstly a striving to express the drapery by parallel lines; then the zigzag folds so strongly marked in the archaic Greek and other early work; then later on, where the folds became larger and with greater vitality in them, till they came to that noble work of Phidias—which, he ventured to say, with all respect to the Greeks, could fairly be paralleled by some of the work shown on the screen that evening. He remembered how, a great many years ago, at the Architectural Association, somebody made the remark that there was the same character in a transverse section of the folds of Greek drapery as in the transverse section of the Greek mouldings, and he was interested to hear Mr. Prior bring this out also with regard to Gothic drapery and Gothic mouldings. That was another proof, if one were needed, that all great art is one, and that the sculpture was not imported from the Continent, and put there, but that it was really made in England, like all great art—for its place, and probably, in some instances, in its place. The other thought that occurred to him was a criticism on the general design of Wells. He felt there was a great want of repose in that front. In this respect it was similar to the Certosa, near Pavia. In this latter building: the front was very much broken-up by boldly projecting buttresses, and the constructive value and expression of these buttresses were utterly destroyed by the treatment with niches, just as one felt in the Wells front. He would be glad to be able to fill-up, with plaster if need be, those niches in the Certosa; and he thought the design at Wells would have been a stronger one if the scheme of decoration of the whole front had not been carried right across. Between the vertical effect of the buttress and the horizontal treatment in the bands of niches and statues, there was, one might say, a want of unity; and it was not so pleasing as if one system had been predominant. He would also desire to note the admirable introduction that evening of the double lantern, so that two slides could be shown side by side simultaneously; and thus the full value of the contrast in the development, to which Mr. Prior and Mr. Gardner had alluded in their lucid explanations, could be appreciated.

MR. CONRAD DRESSLER said Mr. Prior had given him to understand that his Paper was a lecture on archæology, but he was going away convinced that it was a lecture on most beautiful art. He had of late years very much admired Gothic art, though he was trained in Classic art, but he had never seen so many examples of the former placed upon the screen, as he had that evening, side by side, and had not had an oppor-

tunity of comparing the merits of these various schools of Gothic art. He, too, had observed, before Mr. Stannus spoke of it, the great similarity there was in the growth of Gothic art and Classic art. He quite agreed that there was a natural development which seemed to belong to every school, and the first effort of all sculptors had been to imitate architectural forms—straight long forms like columns, long figures with small heads with lines down them very much like the flutings of the Corinthian columns—and by degrees it was the effort of the artist to bring life into them, to bring arms farther away from the body, with more and more of attitude and more and more of action. He felt quite certain that the time came when this emancipation of the statue became injurious to the building, and that was the stage they had reached at the present moment. That, he was afraid, was really one of the reasons why their sculpture did not ally itself to their architecture. The sculpture at the present moment was rather too free. His chief interest, however, in all these things was that of the modern man. Archæology was very interesting, but the great thing was, how were they to derive any benefit, or how were their times to get any of the beauty of the past back again? He did not propose to attempt any solution of that question, but there were doubtless many present who could give some hints, and it was very desirable that such hints should be given. He was sure every one would be delighted to have opportunities such as the old sculptors had of expressing themselves upon the face of fine buildings, rather than of producing a quantity of pretty or even fine work which could only be placed in interiors or haphazardly in public squares, for which they were probably never intended; and he was sure they all would desire to associate themselves once more with the fine buildings of the times.

THE PRESIDENT said he was quite sure they were very unanimous in desiring to offer their best thanks to Mr. Prior for his Paper, and also to Mr. Arthur Gardner. To prepare such a Paper, and to get together and arrange the illustrations so as to make everything clear and easy to understand, must have cost considerable time and thought, and they were under a great debt of obligation to him. He believed they all agreed with him in thinking, though they had not had the opportunity of studying these figures as he had done, that they were the work of English sculptors. He understood from Mr. Prior that probably these sculptors were really superior masons—men who worked on the fronts of the building, and by degrees, as they increased in skill, they were entrusted with the figure work of the building; they had grown up with the building, knew every portion of it, and became so ingrained with its architecture that the folds of the drapery and the sections of their figures were almost unconsciously affected by the mouldings by which the figures were surrounded. Looking at those illustrations, one could not fail to observe how well the figures blended with the architecture. He was quite sure that architects would be only too glad to find sculptors who would blend their work with theirs in the same way. How that was to be achieved in the present day he did not know. Sculptors worked in their studios and architects worked out of doors, and when the sculptors' figures were placed on the buildings they did not always accord so fully with each other as the combined work did at Wells. That arose through the different conditions under which their work was now carried out. It was, he supposed, impossible to expect sculptors to work on the building and by degrees to carve the figures. It was a point that affected sculptors as much as it did architects, and it affected architects as much as sculptors. Architects had all a desire to employ sculpture in their buildings, but there was that difficulty of assimilating it without the intimate knowledge which the sculptor should have of the building before carving the figure in the niche. The President concluded by asking the meeting to pass a most cordial vote of thanks to Mr. Prior, and also to Mr. Gardner.

MR. PRIOR, in responding, said he was very thankful to be able to agree with so much that Mr. Stannus had said, and particularly when he pointed out that it was perhaps rather a large order when Professor Pite asked them to go into the question of the meaning of the Wells front and all the real religious intention of that great building. He had only spoken an hour and a quarter, but it would take ten lectures to go into the whole subject. Neither was he going to be led by Mr. Conrad Dressler into the very burning question of how they were to get any tolerable sculpture upon their modern buildings. How was the sculptor trained in the Academy to appear upon their buildings as the Wells sculptor had done? He could only say that it would happen when the Academy was abolished!

9, Conduit Street, London, W., 23*rd April* 1904.

CHRONICLE.

The Registration Question and the Council.

At the General Meeting of the 18th inst., before calling on Mr. Prior to read his Paper, the President said he had one or two remarks to make with reference to a matter which closely concerned the affairs of the Institute. It would be known possibly that an independent committee consisting of certain members of the Institute had issued a circular asking the opinion of members on the subject of statutory registration. It was only right to mention that the Registration Committee which had been appointed in accordance with a resolution of the Institute had met, and this Committee had practically unanimously expressed the opinion that it would be improper to prejudge the question by issuing such a circular to members before the Committee had had time to report. This opinion was not formally communicated to the committee, as had been intended, but there were several members of the committee present at the Council, and the Council had reason to know that the resolution was informally conveyed to them. He regretted to say, however, that, in spite of this strong expression of opinion, an appeal had been issued to members asking them to record their opinion on the matter before the Institute Committee had had time to consider the question, and therefore before they were in a position to lay before the general body the *pros* and *cons* of registration, which they were anxious to consider carefully with a view to reporting as to its merits or demerits. He had been informed by the Chairman of the independent committee that the circular in question had been sent out through some misunderstanding among the members of his committee. The Council felt, however, that in a matter of such importance there should have been no carelessness in taking such a step. [*Hear, hear.*] Three members of that committee, Mr. Seth Smith, Mr. Edmund Wimperis, and Mr. Guy Dawber, had, he understood, since resigned from the committee, and he (the President) hoped that other members would show their sense of this unfortunate occurrence by resigning also. [*Hear, hear.*] The action so regrettably taken had made the consideration of the question most difficult. The Council had thought it only right that he should make this statement to the general body at the first opportunity. While speaking on the question he might perhaps be allowed to give one little hint on his own account—viz. on the important question of the election of members of Council for the coming year, the responsibility rested with them to elect the best men to represent the Institute and the profession; he trusted members would consider not only this question of registration, but also the general qualification of each man to best represent them on the Council. [*Hear, hear.*]

War Office Barracks Construction Department.

Applications for appointment to the posts of Director of Barrack Construction and Deputy Director of Barrack Construction at the War Office should be forwarded to the Secretary of the War Office before April 30th.

The salary of the Director of Barrack Construction will be £1,500 a year, and that of Deputy Director of Barrack Construction will be £1,200 a year, and both the above appointments will be subject to the ordinary rules of the Civil Service as regards superannuation, pension, &c.

Candidates must be fully qualified architects with thorough knowledge of building.

Applications should be made by letter, stating age and giving full particulars of experience and qualifications, with names and addresses of references as to ability and character, and accompanied by copies (not originals) of not more than three testimonials.

War Office, April 15*th* 1904.

Re the late John Gibson.

National Provincial Bank of England, Limited,
112, *Bishopsgate Street, E.C.,* 13*th April* 1904.

To the Editor of the Journal of the Royal Institute of British Architects.

Dear Sir,—I am asked to request you to note the following in reference to works of the late John Gibson.

It is quite true, as stated in the note in the last number of the Journal, that he designed the first Piccadilly Branch for this Bank. That is *now*, however, Slater's Restaurant.

The *present* Bank in Piccadilly, at the corner of Eagle Place, was designed by Messrs. Waterhouse and Son.—Yours faithfully,

C. H. Brodie, *Surveyor.*

Exhibition of Civic and Social Art.

The Carnegie Dunfermline Trustees propose to hold early in May a Loan Exhibition of photographs, drawings, plans, &c., of cottage or tenement houses, village halls, schools, clubs, libraries, and other public buildings, street architecture, gardens and parks and their furniture;

and of civic improvements generally, especially such as are suitable for adoption in villages and smaller towns. The special object in view is to promote interest in housing reform and in the improvement of civic and social art generally, and to show what has been done in other parts of the kingdom and abroad. The Trustees intimate that they will gratefully welcome the co-operation of members of the Royal Institute in this undertaking, and ask for the loan of photographs, drawings, models, or other objects illustrative of the subjects mentioned. All expenses of carriage will be borne by the Trust, and every care will be taken to ensure the safety of the objects lent. Communications should be made to the Secretary of the Trust, Mr. J. H. Whitehouse, St. Margaret's Hall, Dunfermline.

THE SIXTH INTERNATIONAL CONGRESS OF ARCHITECTS, 1904, MADRID.

Report of the Secretary of the Institute.

To the President and Council.

GENTLEMEN,—I have the honour to report that, in accordance with your appointment, Mr. T. E. Collcutt, *Vice-President*, and myself attended the Sixth International Congress of Architects held at Madrid during the early part of the present month as official delegates of the Royal Institute of British Architects. Mr. Cutler, your other delegate, was unfortunately unable through illness to attend. The other British members of the Congress were Mr. Wm. Henman [*F.*], Mr. R. Clarke Edwards [*F.*], Mr. Wm. Scott (Enniskillen), and Mr. J. Thomson (Tangier).

The official date fixed for the beginning of the proceedings was Wednesday the 6th April, but owing to a change in the engagements of His Majesty the King of Spain the delegates of the various countries were requested by telegram to warn their colleagues that the proceedings would begin on Monday the 4th inst. Mr. Henman, Mr. Scott, and myself arrived accordingly in Madrid on Sunday afternoon.

Monday, 4th April.—In the morning I reported myself at the Atheneo, the large literary and artistic club of Madrid, whose convenient offices and beautifully appointed lecture-hall had been given over to the Congress as headquarters. There I obtained the Congress button, a piece of Toledo inlay, tickets for the two excursions and the farewell banquet, and a card of invitation to the King's reception.

The reception took place at the Palace at 3 o'clock. Members of the Congress, with the ladies that accompanied them, were distributed according to nationalities in a suite of rooms leading from the Throne-room to the State Dining-room. The English, American, and Dutch were placed in three groups in one apartment. In due course His Majesty Alfonso XIII. appeared accompanied by the President and Secretary of the Congress and the officers of his Court. The foreign delegates were honoured by presentation to the King, who shook hands and entered into a short conversation with each individually. I had the honour of being addressed by His Majesty in English. After the King had passed out, Her Majesty the Queen-Mother, the Infanta Isabella, the Infanta Maria Theresa (the King's sister) and her husband, the Prince of the Asturias, entered, and each in turn graciously conversed with the delegates and other members on presentation. All the members of the royal family spoke in English to the British and American representatives. After the proceedings were over the company were invited to wander about the State apartments and inspect the art treasures with which they were filled.

Tuesday, 5th.—The morning was devoted to the opening by Their Majesties of an exhibition of the monumental art of Spain. This was held in a pavilion with glass and iron roof, which formed part of the buildings of a previous exhibition, picturesquely situated in the middle of the Retiro, the public park of Madrid. Their Majesties and the other members of the royal family were received by Señor Don Ricardo Velázquez Bosco, President of the Congress, and the other members of the Spanish Executive Committee, and, after the presentation of such foreign delegates as had not arrived at Madrid in time for the reception of the previous day, were conducted round the exhibition. Before the royal personages left they conversed with various members of the Congress who had been presented.

The exhibition itself consisted of a magnificent series of photographs, which gave, as one went round the walls, an almost complete history of Spanish architecture; many original drawings of old buildings, notably the designs of the Italian Saqueti for the royal palace in 1742; various models, including one of the Segovia aqueduct; and casts of ornament, chiefly Moorish.

Wednesday, 6th.—The Congress proper began in the morning with the preparatory sitting. After the preliminary speeches the *Bureau* or managing committee of the Congress was constituted as follows:

President.
Señor Velázquez Bosco.

Vice-Presidents.
Señores Urioste, Repullés, Arbós, Landecho, Palacio.

General Secretary.
Señor Cabello y Lapiedra.

Hon. Vice-Presidents.
Germany: M. Muthesius and M. Stübben.
Austria: M. Herman Helmer.

Belgium: M. Franz de Vestel.
United States: MM. Allen, Russell, Taylor, Totten, Ittner.
France: M. Daumet.
Holland: M. Cuypers.
Great Britain: M. Collcutt.
Italy: M. Koch.
Portugal: M. d'Avila.
Russia: M. le Comte de Suzor.
Sweden: M. Möller.
Mexico: M. Riva Mercado.

Hon. Secretaries.

Austria: M. Weber.
United States: MM. W. Eames, Glenn Brown.
France: M. Poupinel.
Holland: M. Salm.
Italy: M. Cannizzaro.
Great Britain: M. Locke.
Mexico: M. Mariscal.
Portugal: M. Carvalheira Adaes Bermudes.
Sweden: M. Wickman.
Switzerland: M. Fulpius.

In the afternoon at 3 o'clock the formal opening of the Congress took place in the hall of the University, the Minister of Public Instruction presiding, and supported by the Minister of Public Works, the Civil Governor, the Mayor of Madrid, and members of the diplomatic body. About 2,000 persons were present. The proceedings were formal and oratorical. After a discourse by the President on Spanish architecture and its relation with that of other countries, terminating with a cordial welcome to the foreign members of the Congress, the representative of each nation briefly addressed the gathering, Mr. Collcutt speaking on behalf of Great Britain. The Minister of Public Instruction in the name of H.M. the King then declared the Congress open.

Thursday, 7th.—The sitting opened with the consideration of Subject I.:—"*The so-called 'Modern Art' in contemporary Architecture.*"

M. de Vestel, President of the Société Centrale des Architectes de Belgique, read an interesting Paper in which he defended the freedom of Art, especially in architecture, which must be characterised by a personality and not fall into stereotyped grooves. He established the difference between "modern style" and "modern art" which follows all the vicissitudes or changes of Society.

M. Muthesius (Germany) read a Paper showing the influence of modern methods of scientific construction, and claiming that modern architecture could have rational development only through the close union between the architect and the engineer.

The subject being talked out, Subject II. was brought forward—"*The Preservation and Restoration of Architectural Monuments.*"

A Paper by M. Cloquet (Belgium) was taken as read, and various propositions laid down by him were discussed until the sitting terminated. At the afternoon sitting the discussion was resumed, and finally the following resolutions were adopted:

1. Monuments may be divided into two classes, *dead monuments*, i.e. those belonging to a past civilisation or serving obsolete purposes, and *living monuments*, i.e. those which continue to serve the purposes for which they were originally intended.

2. Dead monuments should be preserved only by such strengthening as is indispensable in order to prevent their falling into ruin; for the importance of such a monument consists in its historical and technical value, which disappears with the monument itself.

3. Living monuments ought to be *restored* so that they may continue to be of use, for in architecture utility is one of the bases of beauty.

4. Such restoration should be effected in the original style of the monument, so that it may preserve its unity, unity of style being also one of the bases of beauty in architecture, and primitive geometrical forms being perfectly reproducible. Portions executed in a different style from that of the whole should be respected, if this style has intrinsic merit and does not destroy the æsthetic balance of the monument.

5. The preservation and restoration of monuments should be entrusted only to architects "diplômés par le Gouvernement," or specially authorised and acting under the artistic, archæological, and technical control of the State.

6. A society for the preservation of historical and artistic monuments should be established in every country. They might be grouped for common effort and collaborate in the compilation of a general inventory of national and local treasures.

Subject III. was then taken—"*The Character and Scope of Scientific Studies in the General Teaching of Architecture.*"

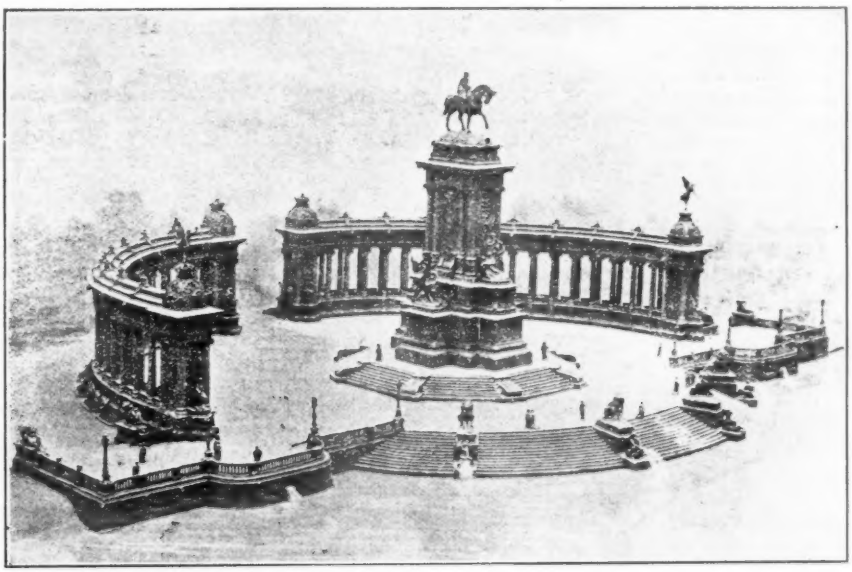
A paper was read in Spanish by Señor Fernandez Casanova, and the meeting was adjourned till Saturday.

After the sitting, members were invited by the architect Don José Grases Riera to inspect the monument to King Alfonso XII., in course of erection in the Park of Madrid.

An illustration of the monument as it will be when completed is given opposite.

Friday, 8th.—The day was devoted to a visit to Toledo. The Civil Governor and the Mayor welcomed the Congressists at the railway station. Various Spanish architects attached themselves to small groups of foreign members and conducted them through the Cathedral and to the objects of interest in the town. Mr. Clarke Edwards and myself are particularly indebted to the great courtesy of Señor Acerbo y Retortillo, who placed all his intimate knowledge of Toledo at our service, and spared himself no pains to render

our visit delightful. Lunch was served in the little Teatro de Rojas, the floor being boarded up to a level with the stage. The band of the Military Academy played in the balcony, and the boxes and galleries were crowded with all ranks of Toledo society, a gay battle of flowers between Congressists and spectators taking place all through the meal. The bandmaster, after playing a *jota*—one of the Spanish national dances—received a floral ovation, and delightfully played the piece again. In its unexpectedness and spontaneity, this lunch was one of the most pleasurable and certainly the quaintest incident in the Congress.



MEMORIAL TO ALFONSO XII., LATE KING OF SPAIN, IN THE PARK OF MADRID. (IN COURSE OF CONSTRUCTION.)

Saturday, 9th.—At the morning sitting of the Congress the educational subject was resumed. Señor Mariscal (Mexico) and Señor Puig y Cadalfach (Barcelona) read papers. The discussion eventually became a contest between the advocates of the scientific and those of the artistic or æsthetic training of the architect. M. Guadet, Professor at the Ecole des Beaux-Arts of Paris, upheld the French atelier system by which the pupil becomes the real disciple of the master and develops by means of intimate personal contact the artistic sense, which is the beginning and end of the architect. Eventually it was resolved that the *bureau* of the Congress should formulate the conclusions that might be deduced from the various arguments.

The same decision was arrived at with regard to Subject IV.—"*The Influence of Modern Methods of Construction on Artistic Form.*"

M. Berlage (Amsterdam) read a Paper on armoured concrete, proclaiming it to be the determining cause in the evolution of future architecture, and urging architects to study artistic forms in their present use of it if they desire to remain masters of their art.

Señores Forte and Jalvo (Madrid) and M. Cuypers (Amsterdam) read papers, and the synopsis of a paper by M. Guastavino (New York) was placed before the meeting. The discussion lasted until late in the afternoon sitting. A paper, Subject V., "*Artistic Copyright in Architectural Works*," read by Señor Salvat (Barcelona), brought the proceedings to a close.

In the evening M. Cannizzaro (Rome) gave a lecture, illustrated by lantern slides, on the excavations executed under his care of the Church of S. Sabba, and on the *Ara Pacis Augustæ*.

I greatly regret that on the following day personal affairs summoned me imperatively back to London. Being by this time the only English representative at Madrid, I was in some embarrassment, which was relieved, however, by the timely arrival at my hotel of Mr. A. N. Prentice [*F.*], who, though not intending to join the Congress, very kindly undertook to stay in Madrid and take my place on the *bureau*. The subsequent notes

of the proceedings are from material which he has since been good enough to supply.

Monday, 11*th*.—The subject of architectural copyright was resumed. M. Cabello y Lapiedra's Paper having been laid on the table, M. Harmand, advocate at the Cour d'Appel, Paris, who has identified himself with the question in France, and succeeded in 1902 in obtaining the insertion of architectural works in French Copyright Law, moved the following resolutions, which were carried unanimously :—

"That seeing :—

"1. That architectural designs comprise exterior and interior perspectives, plans, sections, and elevations, and constitute the first manifestation of the thought of the architect and the work of the architect ;

"2. That the building is only a reproduction on the ground of the architectural designs ;

"works of architecture should be protected in all legislatures and in all international conventions in the same degree as other artistic works."

Subject VI. came on for discussion—"*The Education of Builders' Workmen*."

The following conclusions were arrived at :—

1. Governments, municipalities, and professional bodies should pay particular attention to the technical education of the workman.

2. The teaching should extend to all branches of building, and not be confined to specialities, more or less artistic, for the study of which schools already exist.

3. The teaching in these schools should have as practical a character as possible, so that the teaching should produce good workmen.

4. The direction of these schools should be entrusted *entirely* to architects, and the teaching carried out by technical specialists and experienced master workmen.

5. These schools should issue *certificates* of having passed through the course, and not *diplomas*, which might give rise to false interpretation.

6. Supplementary classes should be established so that workmen after having worked for at least three years as journeymen might by further studies acquire the title of foremen.

7. Architectural societies should encourage workmen by prizes, medals, and other rewards.

The meeting passed on to Subject VII.—"*The Influence of Administrative Regulations on Contemporary Architecture*."

The conclusions were left to be drawn up by the *bureau*.

Subject VIII.—"*The Expropriation of Works of Architectural Art*"—produced the following resolution :—

"The State has the right to expropriate any work of artistic or recognised historic value when in the hands of the owner it is being destroyed or not duly preserved, always provided that an indemnity fixed by competent persons be paid to the owner."

Subject IX.—"*Is it desirable that the Architect should intervene as Arbitrator in the relations between Patrons and Workmen and in the Disputes that arise between them ?*"

A resolution was passed answering the question in the affirmative.

A supplementary resolution, proposed by Señor Acebo (Madrid), not down on the agenda of the Congress, was then carried in these terms :—

"That foreign delegates and the Executive Committee of the Congress solicit from their respective Governments the mutual and gratuitous cession of reproductions of details or not very extensive complete works which, corresponding to different epochs of national art, may become the property of State museums, on the express condition that such reproductions shall be applied to the formation of architectural museums in towns in which architectural education is given either in special schools or officially authorised private *ateliers*."

Tuesday, 12*th*.—The day was devoted to an excursion to Alcalá and Guadalajara.

Wednesday, 13*th*.—At the meeting of the *bureau* the application contained in the letter dated 29th March from the Council of the R.I.B.A. was considered, and it was resolved that the next International Congress should take place in London. As four years had elapsed between the Fifth Congress in Paris and the Sixth Congress in Madrid, it was determined, in order to preserve the triennial character of the Congress, that the Seventh should take place two years hence, in 1906 and not in 1907, as the Council of the Royal Institute suggested. The formal communication from the *bureau* will no doubt arrive in due course.

In the evening the farewell banquet took place.

I cannot conclude without a reference to the enjoyability and great interest of the Congress. We were favoured by the weather of a splendid English June. The courtesy of our Spanish hosts will always be a pleasant memory in the minds of all the foreign representatives. It is impossible to conceive a more perfect organisation. Information was lavishly supplied ; in every fixture the strictest punctuality was observed ; one had only to follow printed announcements and the way of every member of the Congress was smooth. Too much praise cannot be given to the Executive Committee ; and the thanks of the foreign members are particularly due to the President, Señor Don Velázquez Bosco, and the Secretary, Señor Don Cabello y Lapiedra, whose labours in assuring the success of the Congress were indefatigable.

I am, Gentlemen,

Your obedient servant,

W. J. Locke, *Secretary*.

ELECTRIC GENERATING STATIONS.*

By E. Kilburn Scott, A.M.I.C.E., M.I.E.E.

A MARKED feature of most Continental power stations is the switchboard and its tower, which is generally built midway along the outer engine-house wall. The front panels of the switchboard are flush with the inside of the engine-house wall, and the whole of the engine-room space is thus available for machinery. All the switch apparatus proper is in the well-lighted switch-room behind, and the high-tension switches, of the flare type, are overhead, out of reach, and the high-tension conductors lead away from the tower immediately above. Not only does this make an exceedingly good arrangement from the engineering point of view, but it gives the architect an excellent opportunity to relieve what would otherwise be a blank wall. In a water-power station which the writer has had to do with, and which is now being built, this switchboard and tower will be the most prominent architectural feature. The offices, &c., are in a separate building.

Mr. Stanley Peach, in his Paper read before the Institute,* says that no materials capable of bursting into flame should be used, but unfortunately this is not the whole story, for rubber mats, linoleum, and insulating materials generally are very dangerous by reason of the dense smoke they give off. Wood should, of course, be barred, and yet at the same time some form of insulation must be provided on the switchboard platform, and in some cases round the machines. Glass reflector flooring for the switchboard platform provides such insulation, and at the same time has the advantage of allowing light to get underneath. Slate slabs may also be used with advantage.

Fire Risk.—A fault of many English stations is the crowding of the various offices, &c., round about the switchboard and engine-room. (See the drawings of the St. Luke's, Clerkenwell, and the Ipswich stations.*) Such offices must of necessity contain much inflammable material, stationery, furniture, &c.; and although the fire may not spread to the station, yet the water employed in putting it out is capable of doing much harm to electrical plant. It seems to me therefore that it is much better to let the boiler and engine-room and switch-room stand entirely by themselves.

If necessary a gangway fitted with fireproof doors can lead from the upper floor of the adjacent office building to the gallery round the engine room.

Battery Room.—I notice that in the case of Ipswich, described in Mr. Peach's Paper,* the battery room is immediately behind the switchboard. Before the introduction of the reversible booster this would have been considered fair practice, because it would have shortened the numerous end-cell connections. With a reversible booster, however, only two or three connections are required, so the battery may as well be placed in some other convenient and less dangerous situation. Owing to the acid a battery room usually contains much woodwork, such as stands, &c., and the acid fumes are also liable to attack the switchboard fittings. The battery rooms at the St. Helen's and the Mersey Tunnel central station have been wisely built quite separate from the main station.

Chimneys.—Surely Mr. Peach's adoption of square chimneys for the St. John's Wood Station is a mistake, for, other things being equal, to get the same stability a square chimney must be much heavier, some say twice the weight, than a round one. A round chimney can be made to look well, as witness the magnificent stack of the Dresden electricity works, which, I think, is much finer than the one at Munich. Regarding sectional construction of the interior firebrick lining, this certainly strikes me as being a step in the right direction. Besides relieving the bottom layers of firebricks of the great stresses which would otherwise come upon them, it has the advantage that the weight of the lining is added to the stack, thus giving increased stability. It is especially helpful for steel chimneys.

Owing to the coming of the large gas engine and possibly the gas turbine, conditions will entirely change, and the chimney is not likely to be nearly so important a feature as it is in the present steam-driven stations. This being so, there is much to be said in favour of the quickly and cheaply erected steel stack. Such steel stack need not necessarily be an ugly structure; when made taper and fitted with a decent cap, as we have recently erected at Bath, it does not look at all bad. At any rate, the citizens and visitors in that somewhat æsthetic city have not complained.

Galloping Engines.—I note that reference is made by Mr. Peach to "galloping." The worst condition for this would appear to be when a number of single-crank horizontal engines have their cranks synchronised together, as at Frankfort; yet I do not remember to have noticed or heard of any excessive vibration in that station. It is noticeable, however, that the engines are spaced well apart; indeed, this is characteristic of most Continental stations. In this connection it may be mentioned that the introduction of large slow-running gas engines is likely to give some little trouble from vibration. The division of the power over several cylinders is not a necessity, as it is when working with steam, and further it is not desirable from a manufacturing point of view.

I think it rather a pity Mr. Peach has not discussed such questions as ventilation, roof-lighting, provision for piping and cables, access between

* Journal R.I.B.A., 2nd April.

various rooms and with the switchboard, coal storage arrangements, provision for getting in extension sets, &c. These are important matters which are apt to be overlooked, and the discussion of which would have been of great benefit. Exterior ornamentation is all very well, but the convenient interior arrangement and running of the station is the main thing.

REVIEWS.

EVOLUTION.

The Evolution of Earth Structure, with a Theory of Geomorphic Changes. By T. Mellard Reade, F.G.S., F.R.I.B.A., A.M.I.C.E., author of "The Origin of Mountain Ranges," &c. With 41 plates. 8o. Lond. 1903. Price 21s. net. [*Longmans, Green & Co., Paternoster Row, E.C.*]

Sir Oliver Lodge, in a recent address at the Birmingham University, stated that "in old days Heraclitus promulgated the doctrine that the universe was not a 'being' but a 'becoming,' that everything was in a state of flux, that nothing is stationary, fixed, or permanent. It is absolutely true. Twenty years ago it was thought that the atoms of matter were exempt from this liability to change. The form of grouping of the visible material aggregates changed indeed, but, as Maxwell said, the atoms themselves remain constant; they are the foundation-stones of the material universe, and are perfect in size and number and weight, unchanged and unchangeable, not capable of wear, but as true to-day as when they were coined at the mint of the mighty Artificer in some inconceivable dawn of creation. Not so; the process of change has now been found to reach to these also. Nothing material is permanent. Millions and billions—ay, trillions—of years it may last; but it is slowly changing, not merely the groupings, but the foundation-stones themselves. The atoms are crumbling and decaying. Must they not also be forming and coming to the birth? This last we do not know as yet. It is the next thing to be looked for. Decay only, without birth and culmination, cannot be the last word. The discovery may not come in our time, but science is rapidly growing, and it may. Science is still in its early infancy. We are beginning to comprehend a few of the secrets of Nature; we are yearly coming nearer to some sort of comprehension of the mind and method infused into the material cosmos. We now know things which have been hidden from the wise and prudent of all time. Surely somewhere there must be joy at seeing man thus entering into his heritage, and realising these primal truths concerning his material environment, whereof he has been living in ignorance all these thousands of years."

In this connection we are much interested to draw the attention of members to the work of an architect, Mr. T. Mellard Reade [*F.*], Past President of the Liverpool Geological Society, author of *The Origin of Mountain Ranges*, as also of *Chemical Denudation in Relation to Geological Time*, who has just published a treatise entitled *The Evolution of Earth Structure, with a Theory of Geomorphic Changes.*

In his preface, Mr. Reade remarks that "the application of dynamical principles to the explanation of the facts of geology is the most modern phase of geological investigation, and it is to this branch that my principal studies have been directed." His inquiry into the cause of regional oscillations of the level of the earth's surface, with the theory of geomorphic changes, is divided under three headings, viz.:—

1. Geological Evidences of Bendings and Changes of Level of the Earth's Crust.
2. Origin of Regional Vertical Movements of the Earth's Crust.
3. Magnitude of the Mechanical Forces involved in Continental Oscillations.

The subsequent portions of the book are devoted to the Dynamics of Mountain Structure and Experimental Geology.

He writes: "That there have been oscillations of the level of the land relative to the mean sea-level is a fact that attracted the attention of early philosophers and geologists. This was roughly inferred from the discovery of marine fossils in rocks thousands of feet above the sea-level. As the science of geology advanced, these marine exuviæ, it was found, had been in one class of cases lifted into their positions by the folding of the rocks in which they were entombed, and their elevation into mountain-ranges by lateral pressure; and in another class of cases by the direct elevation—differential, it may have been—of whole regions to be measured by thousands of square miles. Again, it was found that in all but the more recent formations, such as the Pleistocene, the rocks had undergone so many vicissitudes and movements since they were laid down on the shores or beds of the sea that it was difficult, if not impossible, to tell whether the last movement had been one of elevation or depression. In fact, the only safe inference that could be drawn was that the vertical movements the earth's crust had undergone, as exhibited on the dry land, were multitudinous. The fossils, such as the nummulites found in limestone of Eocene age in the Alps, Pyrenees, Caucasus, and the Himalayas, and up to 16,500 feet in Western Thibet, had attained such extreme elevation through the rocks in which they were enclosed having been involved in the mountain-building. Later investigations have, however, shown that numerous vertical movements have taken place in the British Isles in what are called Pleistocene times, some being

pre-glacial, others glacial or post-glacial, or even recent. These are marked by raised beaches, buried river-channels, or submerged forests. The proofs of these movements are not to be questioned by any sane investigator. Let any one who doubts visit the 40-foot beach on which the town of Irvine, in Ayrshire, is built, and examine the constitution of this considerable raised plateau or delta as shown in the banks of the Irvine Water, where it cuts through these deposits, and I venture to predict that he will return convinced. Again, it has been conclusively shown by Spencer, Gilbert, and others that the region of the great lakes of North America has undergone warping or differential vertical movement, by which the originally horizontal shores of the lakes have become inclined, and it is considered by these geologists that the movement is still in progress. Gilbert estimates the mean rate of tilting at 0·42 foot per 100 miles per century. In Greenland, undoubted sea margins with marine shells of recent species occur up to 1,000 feet, and Colonel Feilden's observations go to prove that there has been a general movement of upheaval of the land which surrounds the North Pole, as previously pointed out by Sir Henry Howorth. In Africa, the valley of the Congo is continued seawards as a submarine valley to a profound depth, and I fully believe that a careful examination of any continent or island on the globe would yield evidences of fluctuations of level to a greater or lesser extent. Many thinkers, from an early period in the study of geology, seeing that while one portion of the earth's surface has been elevated another has been depressed, have considered the phenomena to be related as cause and effect, looking upon these opposite movements as contemporaneous; but why they should stand in this relation is not apparent. The explanation present to their minds appears to have been that in some unknown way there was a transference of material from areas of subsidence to areas of elevation, which, of course, must have taken place either in or under the earth's crust. An adequate cause of such a transference on the scale required is difficult to conceive. The additional mass of material added or pushed up in one area would have to be balanced by an additional weight added to the depressed area. A shifting of weight by denudation and sedimentation we can conceive; but, as we have seen, it is insufficient, and such transference, even if it bent down the crust, would not cause hollows or apparent depression, but rather filling-up. Where, then, can the extra weight in the depressed area be derived from to balance the extra mass in the upheaval area, for if one movement were consequent upon the other, some such transference of material would seem to be required? We can scarcely appeal to secular cooling of the earth as an efficient cause, nor am I aware that any geologists have done so. It may, however, be thought that the cooling and falling in, or bending, of the crust can in some way produce this effect, but I have a difficulty in following out such a conception. Secular refrigeration, it appears to me, would act cumulatively in one direction, whereas the movements of the earth's envelope are essentially slow pulsations.

"On a full consideration it seems highly improbable that these movements are due in any great measure to either an external or internal transference of material from one area to another. The balance of pressure must be preserved within certain limits, and I find it impossible to think of any force or agency at work in the earth's interior tending to produce such a movement; but even if there were such an agency, its effects would be limited by the possible deformation the earth could stand and retain. I venture to think that if the specific gravity of the materials of the earth were identical in each of the zones from the surface to the centre, even though the earth were as rigid as steel, the present configuration or inequalities of the levels of the earth's surface could not be retained.

"If these conceptions have an element of truth in them, the mean specific gravity of the elevated parts of the earth, and the foundations on which they rest—that is, the continents and their mountains, and the under-mass of the earth—must be less than the specific gravity of the earth's crust and interior mass underlying the deepest depressions. So far as pendulum observations inform us, the fact appears to be established that the earth has a higher specific gravity under the oceans than it has under the continents. These observations, limited though they be, tend to show that though the levels of the earth's surface are variable, there exists in the earth's interior an equality of stresses, and that the protuberances do not create stresses on their foundations tending to force them down, and, by displacing the under-layers, bring about an equality of surface levels. If the protuberances—by which I mean those portions of the continents and islands that are above the mean spheroidal level—represent so much additional material piled upon a statically balanced spheroid, it seems to me that a gradual deformation must be taking place, and a sinking of the higher lands. Should this be the case, what force exists within the earth to prevent the continued effects of this weighting and the natural removal of prominences above the sea-level to one uniform plane? If no such force exists or has existed, the earth would long have ceased to possess the diversified features of land and water, so favourable to the habitation of man, and which have taken him so long to discover and map out. Whichever way the problem is looked at, it is evident that activities must exist within the earth tending to the preservation of the relative proportions of land and

water, which geologically seem to have been fairly constant throughout the ages.

"What, as philosophers, we have to find out is the probable nature of this active principle, which may, indeed, be reckoned as the vital force of our planet. That upheavals above the mean level of the spheroid are balanced by depressions below it, and that they take place contemporaneously, may or may not be true. We have no solid proof that it is so, and nothing in disproof. If true, it would at best be no more nor less than the statement of a fact, and carry no dynamical explanation with it. Looking at the question from every point, the various facts already stated appear to me to point to one conclusion, and to one only. The changes of level must be due to change of bulk of certain sections or portions of the earth without change of mass. To what can we assign this active principle of change? The most obvious answer is, variations of temperature. But what is there to create variations of temperature in the earth's mass? Blanketing by sedimentary deposits, as already explained, is quantitatively insufficient, and the movements are, as we have seen, largely independent of such surface transference of matter. Our acquaintance with the condition of the earth's interior is so limited that little more than suggestions can be offered. If the earth be the rigid body physicists now maintain it to be, it is obvious, considering the rate of increase of temperature downwards—the mean being estimated at 1° Fahr. per 50 feet—that it is only kept solid by compression, and that were a sufficient relief of pressure to take place at any locus the matter which before acted as a solid would then act as a fluid. The intermittent action of volcanoes and the changes of position in volcanic centres that have taken place in geological time seem to point to an instability of conditions such as would naturally characterise a globe at a high temperature kept solid by pressure. In my *Origin of Mountain Ranges* I have said: 'It seems to me that unless the matter which is molten at the surface is solid at its origin, it is impossible to formulate a satisfactory explanation of volcanic phenomena.' The view that our globe is an inert cooling mass, which suffers no change except that due to secular contraction, is not supported by the facts of geology. Indeed, the very reverse is the case. The materials of our planet, so far as we can observe them, are in a constant state of flux and change, sometimes very actively, at other times more slowly, and many are the changes rung on the combinations of the elements. These surface changes in the composition and form of the envelope of the earth are the life of the planet, and a continuation of, perhaps, greater changes which they have formerly undergone in the earth's interior.

"When we see that the outer envelope, with which we are best acquainted, undergoes an evolution through the continual addition made to its sedimentary crust by the waste from rocks ejected at the surface by volcanic action, and by the chemical and mineralogical combinations and recombinations that take place from their new associations, can we refuse to believe that a mass of complex matter in the earth's interior, vast in comparison, at a very high temperature, and under enormous pressure varying with its depth, is not similarly, but to a higher degree, subject to change and interchange, combination and recombination?

"It is well known that the lavas ejected from volcanoes differ at various times. At one time basic lavas prevail, at another acidic. It has been sought, by Richthofen and others, to educe laws which govern the succession of these eruptions, but, according to Judd, such attempts have hitherto failed. The fact, however, of the variability of the ejections points to mineral and chemical changes going on in nature's laboratory. When we consider that, even in minerals that crystallise out in two systems, the specific gravities are seldom the same, though the chemical constituents are identical, it would seem that such differentiation, whether proceeding from separation or recombination of the elements, would be accompanied by a change of bulk. Furthermore, when new combinations take place, they are usually accompanied by a change of temperature, which must affect the bulk of the matter in which it occurs as well as that surrounding and above it, through which the change of temperature must travel. Even in the process of cooling, sudden changes of temperature take place, as instanced in what is called 'recalescence.' That the phenomenon of 'recalescence' is accompanied not only by a sudden development of heat, but also by expansion and change of bulk, is shown by a process in certain American rolling-mills, where the bars are rolled in lengths of 300 feet, and allowed to cool in a special cooling bed, which keeps them straight. The great length of the bars renders very evident certain peculiarities in their contraction when cooling, the total movement being between three and four inches. It is noted that when first placed on the bed contraction proceeds rapidly, then checks, and finally ceases. The bar then expands again, probably during recalescence, after which the contraction is uniform till the metal is cold."

The illustrations in Mr. Reade's book consist chiefly of photographs of metal and clay plates distorted by variations of temperature, by compression or strains, and explain the theory propounded as to the origin of the disturbance of the strata composing the crust of the earth's surface. The copious and well-ordered index affords ready access to the subjects dealt with.

In his closing remarks Mr. Reade writes: "Before I commenced the study of geology in the field, my practice as an architect and engineer had naturally brought me into contact with many

physical problems, and it is owing to this education that I am enabled to approach their solution from a standpoint somewhat different from that of most geologists. It is to the aid afforded by the collaboration of scientific workers in their various branches that we must now look for the advancement of one of the most interesting of studies—the history of the evolution and development of the structure of the earth we inhabit."

FRANCIS HOOPER.

MINUTES. XII.

At the Twelfth General Meeting (Ordinary) of the Session 1904-5, held Monday, 18th April 1904, at 8 p.m.—Present: Mr. Aston Webb, R.A., F.S.A., *President*, in the Chair, 27 Fellows (including 10 members of the Council), 30 Associates (including 2 members of the Council), 2 Hon. Associates, and numerous visitors: the Minutes of the Meeting held 28th March 1904 [p. 324] were taken as read and signed as correct.

The President, on behalf of the Council, spoke deprecating the action of an independent committee of members in circularising the General Body with a view to ascertaining the numbers for and against statutory registration of architects, despite the known fact that the Committee appointed by the Institute to consider the principle of registration had deemed it inadvisable as a first step to take a poll of members on the question.

A Paper by Mr. Edward S. Prior, M.A.Cantab., on THE STATUES OF WELLS, WITH SOME CONTEMPORARY FOREIGN EXAMPLES, having been read by the author and illustrated by lantern views, a further series of illustrations was shown and described by Mr. Arthur Gardner, whereupon a discussion ensued and a vote of thanks was passed to Messrs. Prior and Gardner by acclamation.

The proceedings then closed, and the Meeting separated at 10 p.m.

ALLIED SOCIETIES.

THE GLASGOW INSTITUTE.

Annual Meeting.

The annual general meeting of the Glasgow Institute was held on the 6th April, Mr. Horatio K. Bromhead [*F.*], President, in the chair. The secretary read the thirty-sixth annual report, which stated that during the past session Sir James Guthrie, president of the Royal Scottish Academy, had been added to the roll of honorary members. The number of ordinary members on the roll is now seventy-three. The Council, the report stated, had received several letters from Allied Societies regarding registration of architects, but resolved not to do anything in the matter till the committee recently appointed by the R.I.B.A. had had an opportunity of reporting on the subject. A proposal to incorporate the Glasgow Architectural Association with the Institute is under deliberation. The President, in moving the adoption of the report, said that one of the most important improvements for the profession to which he looked forward was the openness and publicity of competitions.* They were indebted to the Corporation of Glasgow, which had been most successful in obtaining by competitions a number of good designs for public libraries. This was a great contrast to the Royal Infirmary competition. On a recent occasion the Lord Provost said that the design which the governors were proposing to adopt had been submitted to their officials, who had indicated some details which it was thought required improvement; further, that the design had been, or was about to be, remitted to two experts, for them to suggest any possible improvements, provided the outside walls were not interfered with. They might therefore conclude that there might at last be a dawning idea at headquarters that a grievous mistake had been made in casting out the designs that were pronounced the best and in refusing to submit the inferior favoured one to public daylight. If he had not seen the front elevation of the chosen design it would have been his opinion that any new one might be better. But the proposed "sky-scraper" could only be considered, if placed adjacent, a calamity to the most venerable specimen of architecture in Scotland, the Cathedral. If it were for the public good, feelings might be stifled, but when it was known that the most modern and perfect ideas were dead against it, when one saw that the most remarkable modern hospital (Belfast) was only one storey high, and the intended new building at Birmingham was to be only two storeys high, one could not help seeing the ill-advisedness of spending a large sum of money after the manner of a bygone generation. However, the Institute might take a little comfort in the hope that their action had produced a limited modification of the defects. Looking ahead, there appeared to be a little cloud arising on their horizon in the unfortunate tendency to divide the profession into two parties. On the one hand there were architects who seemed to want to make out that art was everything, and who struggled to get elected into some art atmosphere which they possibly imagined was superior to architecture, where they could ignore business capacity and practical knowledge by employing skilled specialists to do the real work for them. Perhaps there was also a remnant who did not want to learn art, who even held that it could not be learnt, or certified, or valued, but could only be born in one. On the other hand, they saw men who were content to make their work practical and business-like, whose skill enabled them to use materials in a sensible and economical manner, but with little thought of suppressing what was ugly. From this point of view the recent agreement between the School of Art

* Mr. Bromhead acted as assessor in the competitions for the following Public Libraries, and except in one case all his selections were adopted by the Glasgow Corporation:—Springburn, Govanhill and Crosshill, Maryhill, Woodside, Dennistoun, Bridgeton, Parkhead, and Hutchesontown.

and the Technical College to confine the art teaching of architecture to the School of Art and the constructive and scientific branches of architecture to the Technical College was quite a disaster. The antidote was, however, in the air in the shape of a statutory registration of architects, which had become the question of the day. He hoped this question would lead both sides to see that the happy medium was a combination of both ideas.

The Office-bearers and Council for the ensuing year have been elected as follows:—President, Mr. John Keppie [*F.*]; Vice-President, Mr. James M. Munroe; Council, Messrs. David Barclay [*F.*], A. N. Paterson [*A.*], Horatio K. Bromhead [*F.*], James Lindsay [*A.*], T. L. Watson [*F.*], Alexander M'Gibbon [*A.*], Andrew Balfour, W. J. Boston, Professor Gourlay [*A.*], J. A. Campbell, Thomas Baird, junr., R. D. Sandilands, James K. Hunter, and J. M. Crawford.

PRESIDENTIAL BADGE OF OFFICE, LEEDS AND YORKSHIRE SOCIETY.

Designed by Walter Gilbert and executed in oxidised silver by the Bromsgrove Guild of Applied Arts.

Subscribed for by the Members of Council of the Leeds and Yorkshire Society during the third year of the presidency of Mr. Butler Wilson [*F.*].